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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,902	04/02/2001	Mark A. Harper	10003780-1	1593

7590 06/15/2005

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EXAMINER	
DIVINE, LUCAS	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/824,902	HARPER ET AL.	
	Examiner	Art Unit	
	Lucas Divine	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1 – 38 are currently pending.

2. Amendments to specification are accepted; drawing objections withdrawn.

3. Amendments to the abstract are accepted, specification objection withdrawn.

4. Claim amendments to claims 5, 7, 30, and 32 make claims definite; 35 USC § 112 rejections of claims withdrawn.

Response to Arguments

5. Applicant's arguments with respect to claims 1 – 38 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1 – 13, 15, 21 – 35, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma (US 5663750) and Motamed et al. (US 2002/0060801) hereafter as Sakuma and Motamed.

Regarding claim 1, Sakuma teaches a **method for ascertaining resource requirements of a print job sent to a printer** (drive element [col. 5 line 6]) **via a print driver, the method including:**

creating a document of the print job (Figs. 1 and 3, where a user creates a document of the print job by inputting data for the document [col. 4 line 26]) **with the print driver** (print river 20 drives the whole printing apparatus 1; col. 4 line 11, wherein the controller drives the whole print device) **and reading the print job into memory directly from the print driver** (Fig. 3, memory 22 is shown as directly connected to the controller 20 and stores the text data for the job [col. 4 lines 39-40]);

sampling a task requiring a consumable resource to provide a sample by overlaying a sample window over a portion of the document (window of a character sample [col. 4 lines 63 – col. 5 line 2]).

analyzing the sample window of the task with respect to resource requirements thereof and providing task sample requirement data in response thereto (average amount of ink consumed for printing the character is analyzed in col. 4 line 65 is analyzed); **and**

ascertaining the resource requirements of the task based on the task sample requirement data (getting the total amount of ink to be consumed by a task by multiplying the sample by the complete job [col. 4 lines 63 – col. 5 line 2]).

While Sakuma teaches a system for predicting how much of a consumable the print job will take up, including one method of rasterizing the whole document [col. 4 lines 44-59], Sakuma does not specifically teach providing low resolution analysis with respect to the consumable requirements.

Motamed teaches providing **low level resolution analysis of a task** to estimate toner consumption (paragraphs 0012 and 0027).

It would have been obvious to one of ordinary skill in the art that providing two separate ways to predict toner consumption in a system would be preferable to only using one way. The motivation for doing so would be to more accurately predict consumable usage. This could be done a number of ways. By having two methods of prediction, the estimates could be averaged or compared to gain a more accurate number. For example, if one of the prediction methods was way off (let's say the character grabbed by the window is a period [.], then the prediction of consumable for the job maybe way off), the other might be closer and would prevent misjudgments of toner prediction, and visa versa. Other ways of using two prediction methods as advantageous over just one are known in the art. Further, as stated above, Sakuma already teaches a method for creating a bit map of a job to predict toner estimation. Thus, the low level rip could be beneficial to the system of Sakuma by providing a faster bit conversion process that uses less system resources [Motamed paragraph 0012].

Regarding claim 2, which depends from claim 1, Sakuma teaches **the task includes printing an image on a document** (Fig. 4 step S6).

Regarding claims 3, which depends from claim 2, Sakuma teaches **memory of the step of sampling is a computer readable buffer** (Fig. 3 22a, col. 4 lines 46-47).

Regarding claim 4, which depends from claim 3, Sakuma teaches **formatting the file in the buffer in print format** ('developing text data into bit pattern data' col. 4 line 45).

Regarding claim 5, which depends from claim 4, Sakuma teaches **window having an area of smaller the area of the document** (one character is smaller than the area of the whole document [col. 4 line 65]).

Regarding claim 6, which depends from claim 5, Sakuma teaches **Raster Image Processing analysis within the sample window to determine window coverage** ('developing text data into bit pattern data' and then the steps of col. 4 lines 48-59, is taught by Sakuma as a method to predict ink consumption, Sakuma therefore suggests that predicting the ink consumption of the sample [col. 4 line 65] is completed in the same manner, by developing bit data and the subsequent steps).

Regarding claim 7, which depends from claim 6, Sakuma teaches **multiplying the window coverage by a factor related to a size of the smaller area to determine the page coverage of the document** (col. 4 lines 64-66).

Regarding claim 8, which depends from claim 7, Sakuma teaches **multiplying the page coverage by a number of pages in the task to determine job requirements** (col. 4 line 66 – col. 5 line 2).

Regarding claims 9 – 12, which depend from claim 8, Sakuma teaches **comparing** (Fig. 9 step S33), **executing if possible** (Fig. 9 step S34), **providing a message** (Fig. 9 step S40) , **and securing more resources** (col. 1 lines 22-25).

Regarding claim 26, the method steps of claim 1 teach all of the program codes of claim 26. The method steps of claim can be executed as program code by processors and as stored in the memory of a printer as shown in Sakuma in controller 20 and memories 21, 22, and 22a. Therefore, the program code claim 26 is rejected for the same reasons as stated above in the rejection of claim 1.

Regarding claim 27, which depends from claim 26, the method steps of claim 2 teach all of the limitations of program code claim 27. Therefore, claim 27 is rejected for the same reasons as discussed in the rejection of claim 2.

Regarding claim 28, which depends from claim 27, the method steps of claim 3 teach all of the limitations of program code claim 28 (file is read from memory 22 into memory 22a of Sakuma [Fig. 3] as it is formatted). Therefore, claim 28 is rejected for the same reasons as discussed in the rejection of claim 3.

Regarding claim 29, which depends from claim 27, the method steps of claim 3 teach all of the limitations of program code claim 29. Therefore, claim 29 is rejected for the same reasons as discussed in the rejection of claim 3.

Regarding claim 30, which depends from claim 29, the method steps of claim 5 teach all of the limitations of program code claim 30. Therefore, claim 30 is rejected for the same reasons as discussed in the rejection of claim 5.

Regarding claim 31, which depends from claim 30, the method steps of claim 6 teach all of the limitations of program code claim 31. Therefore, claim 31 is rejected for the same reasons as discussed in the rejection of claim 6.

Regarding claim 32, which depends from claim 31, the method steps of claim 7 teach all of the limitations of program code claim 32. Therefore, claim 32 is rejected for the same reasons as discussed in the rejection of claim 7.

Regarding claim 33, which depends from claim 32, the method steps of claim 8 teach all of the limitations of program code claim 33. Therefore, claim 33 is rejected for the same reasons as discussed in the rejection of claim 8.

Regarding claim 13, Sakuma teaches a **method for ascertaining resource requirements of a print job sent to a printer** (drive element [col. 5 line 6]) **via a print driver, the method including:**

creating a document of the print job (Figs. 1 and 3, where a user creates a document of the print job by inputting data for the document [col. 4 line 26]) **with the print driver** (print river 20 drives the whole printing apparatus 1; col. 4 line 11, wherein the controller drives the whole print device) **and reading the print job into memory directly from the print driver** (Fig. 3, memory 22 is shown as directly connected to the controller 20 and stores the text data for the job [col. 4 lines 39-40]);

sampling a task requiring a consumable resource to provide a sample by overlaying a sample window over a portion of the document (window of a character sample [col. 4 lines 63 – col. 5 line 2]).

comparing the sample window analysis data to data relating to an availability of the resource and providing an output with response thereto (Fig. 9 S33 for comparing, subsequent steps for output in response).

While Sakuma teaches a system for predicting how much of a consumable the print job will take up, including one method of rasterizing the whole document [col. 4 lines 44-59], Sakuma does not specifically teach providing low resolution analysis with respect to the consumable requirements.

Motamed teaches providing **low level resolution analysis of a task** to estimate toner consumption (paragraphs 0012 and 0027).

It would have been obvious to one of ordinary skill in the art that providing two separate ways to predict toner consumption in a system would be preferable to only using one way. The motivation for doing so would be to more accurately predict consumable usage. This could be done a number of ways. By having two methods of prediction, the estimates could be averaged or compared to gain a more accurate number. For example, if one of the prediction methods was way off (let's say the character grabbed by the window is a period [.], then the prediction of consumable for the job maybe way off), the other might be closer and would prevent misjudgments of toner prediction, and visa versa. Other ways of using two prediction methods as advantageous over just one are known in the art. Further, as stated above, Sakuma already teaches a method for creating a bit map of a job to predict toner estimation. Thus, the low level rip could be beneficial to the system of Sakuma by providing a faster bit conversion process that uses less system resources [Motamed paragraph 0012].

Regarding claim 15, Sakuma teaches **providing actual data relating to an amount of resources required by the task** (Fig. 9 step S34 calculates the actual remaining resources that relates to how much was used by the task).

Regarding claim 21, which depends from claim 13, Sakuma teaches **sampling includes the step of performing a Raster Image Processing analysis** ('developing text data into bit pattern data' and then the steps of col. 4 lines 48-59, is taught by Sakuma as a method to predict ink consumption, Sakuma therefore suggests that predicting the ink consumption of the sample [col. 4 line 65] is completed in the same manner, by developing bit data and the subsequent steps).

Regarding claims 22 – 24, which depend from claim 13, Sakuma teaches **executing if possible** (Fig. 9 step S34), **providing a message** (Fig. 9 step S40) , **and securing more resources** (col. 1 lines 22-25).

Regarding claim 34, the method steps of claim 13 teach all of the limitations of claim 34. The method steps of claim can be executed as program code by processors and as stored in the memory of a printer as shown in Sakuma in controller 20 and memories 21, 22, and 22a. Therefore, claim 34 is rejected for the same reasons as stated in claim 13 as executable as program code.

Regarding claim 35, which depends from claim 34, the method steps of claim 15 teach all of the limitations of program code claim 35. Therefore, claim 35 is rejected for the same reasons as discussed in the rejection of claim 15.

Regarding claim 25, Sakuma teaches a **method for ascertaining resource requirements of a print job sent to a printer** (drive element [col. 5 line 6]) **via a print driver, the method including:**

creating a document of the print job (Figs. 1 and 3, where a user creates a document of the print job by inputting data for the document [col. 4 line 26]) **with the print driver** (print river 20 drives the whole printing apparatus 1; col. 4 line 11, wherein the controller drives the whole print device) **and reading the print job into memory directly from the print driver** (Fig. 3, memory 22 is shown as directly connected to the controller 20 and stores the text data for the job [col. 4 lines 39-40]);

overlaying a window over a document print job in a computer readable medium (memory 22a which stores bit pattern data) **to provide a sample** (window of a character sample [col. 4 lines 63 – col. 5 line 2]);

providing analysis data with respect to consumable resource requirements of the sample (average amount of ink consumed for printing the character is analyzed in col. 4 line 65 is analyzed); **and**

ascertaining the resource requirements of the document based on the sample (getting the total amount of ink to be consumed by a task by multiplying the sample by the complete job [col. 4 lines 63 – col. 5 line 2]).

While Sakuma teaches a system for predicting how much of a consumable the print job will take up, including one method of rasterizing the whole document [col. 4 lines 44-59], Sakuma does not specifically teach providing low resolution analysis with respect to the consumable requirements.

Motamed teaches providing **low level resolution analysis** to estimate toner consumption (paragraphs 0012 and 0027).

It would have been obvious to one of ordinary skill in the art that the low level resolution analysis of Motamed would be beneficial in predicting consumable usage in Sakuma. The motivation for doing so would have been to provide faster bit conversion that uses less system resources when converting the sample to bit data [Motamed paragraph 0012] and therefore a faster system for toner estimation.

Regarding claim 38, the method steps of claim 25 teach all of the limitations of claim 38. The method steps of claim can be executed as program code by processors and as stored in the

memory of a printer as shown in Sakuma in controller 20 and memories 21, 22, and 22a. Therefore, claim 38 is rejected for the same reasons as stated in claim 25 as executable as program code.

7. Claims 16 – 20, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma and Motamed as applied to claims 13, 15, 34, and 35 above, and further in view of Kanaya et al. (US 6517175) hereafter as Kanaya.

Regarding claims 16 and 17, which depend from claim 15, the combination of Sakuma and Motamed does not specifically teach using correction data to help predictions in the future.

Kanaya teaches a way to make consumable prediction more accurate by providing actual data relating to an amount of resources required by the task (Fig. 14 step S212, col. 22 lines 62-64, wherein the actual data of cumulative ejected ink is retrieved and stored in the memory for better predictions, other actual data provided by the system for estimating ink consumption are temperature, residual quality of ink, and others discussed in col. 22 lines 1-17),

comparing the actual data to the low level analysis data and generating correction data in response thereto (col. 21 and 22 teach generating a correction coefficient for correcting errors in standard ejecting, factors that go into this correction coefficient are the actual data discussed in claim 15; col. 21 lines 63-65 teach various correction coefficients, including inherently the correction of calculated amount of ink vs. actual amount of ink ejected) and

adjusting the task sampling step in response to the correction data (the equation in col. 21, lines 46-47, shows how the correction coefficient is used to adjust the sampling step above by adjusting the estimation of ink usage).

It would have been obvious to one of ordinary skill in the art to also take into account such factors as temperature of ink, residual quantity of ink, and dot patterns as well as updating and correcting the factors as jobs are produced. Temperature, residual quantity, and dot patterns would have all been issues that could come up in the system of Sakuma and Motamed. The motivation for taking such factors into account would be to make the printing system more accurate in its predictions of ink output.

Regarding claim 18, which depends from claim 17, Sakuma teaches **printing an image on a document** (Fig. 4 step S6).

Regarding claim 19, which depends from claim 18, Sakuma teaches **printing plural images on plural documents** (col. 4 line 67, wherein multiple images can be printed on multiple document pages).

Regarding claim 20, which depends from claim 19, Sakuma teaches **the images include text** (col. 4 line 39).

Regarding claim 36, which depends from claim 35, the method steps of claim 16 teach all of the limitations of program code claim 36. Therefore, claim 36 is rejected for the same reasons as discussed in the rejection of claim 16.

Regarding claim 37, which depends from claim 36, the method steps of claim 17 teach all of the limitations of program code claim 37. Therefore, claim 37 is rejected for the same reasons as discussed in the rejection of claim 17.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma and Motamed as applied to claim 13 above, and further in view of Gormish et al. (US 5337362) hereafter as Gormish.

Regarding claim 14, which depends from claim 13, while the combination teaches an image formation system with low resolution rip of the data, the combination does not specifically teach that the low resolution is 50 dpi.

Gormish teaches reducing the resolution of an image to **fifty dots per square inch** in order to speed up processing (col. 9 lines 50-65).

It would have been obvious to one of ordinary skill that the low resolution RIP of Motamed could reduce images to 50 DPI as taught in Gormish. The motivations for doing so would have been to process the image data faster by providing an even lower resolution to analyze and to save memory in saving the image file (Gormish col. 9 line 53, wherein the low resolution allows for fast data manipulation and analysis and line 57, wherein 50 DPI provides a much smaller file than larger resolutions). Further 50 dpi is an even factor from most printing outputs (for example, 200 or 400 dpi) and would therefore be easy to compute with in generating a thumbnail RIP of Motamed.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US-6466749, O'Brian, 10-15-2002: teaches an adjustable develop ratio forming method and apparatus including selecting a portion of a job and determining the toner needed just for that portion.

US-6809833, Blair et al., 10-26-2004 : teaches a late binding of device settings in a host raster image processor including reading a job directly from the printer driver to memory.

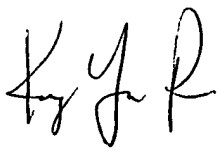
10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucas Divine whose telephone number is 571-272-7432. The examiner can normally be reached on Monday - Friday, 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KING Y. POON
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ljd